

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

HARDING, Richard P  
MARKS & CLERK  
4220 Nash Court  
Oxford Business Park South  
Oxford OX4 2RU  
GRANDE BRETAGNE

18 DEC 2000

PCT

## NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Rule 71.1)

Date of mailing  
(day/month/year)

14.12.2000

Applicant's or agent's file reference  
DTP.P51075PC

### IMPORTANT NOTIFICATION

International application No.  
PCT/GB00/00731

International filing date (day/month/year)  
01/03/2000

Priority date (day/month/year)  
02/03/1999

Applicant  
WEATHERFORD/LAMB, INC. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.


#### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office - P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk - Pays Bas  
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl  
Fax: +31 70 340 - 3016

Authorized officer

Daniels, H

Tel.+31 70 340-3718




# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference DTP.P51075PC		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/00731	International filing date (day/month/year) 01/03/2000	Priority date (day/month/year) 02/03/1999	
International Patent Classification (IPC) or national classification and IPC E21B21/00			
Applicant WEATHERFORD/LAMB, INC. et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input checked="" type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul>			
Date of submission of the demand  18/09/2000		Date of completion of this report  14.12.2000	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized officer  Rampelmann, K  Telephone No. +31 70 340 2723	



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/00731

**I. Basis of the report**

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).)*:

Description, pages:

1-13 as originally filed

Claims, No.:

1-10 as originally filed

Drawings, sheets:

1/6-6/6 as originally filed

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/00731

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	1-10
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-10
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-10
	No:	Claims	

2. Citations and explanations  
see separate sheet

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
see separate sheet

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Generally known from the background art is an apparatus for forming a borehole using a rotatable pipe and a fluid.

The apparatus of the invention having the features of claim 1 further comprises  
an upper tubular disposed above the borehole;

a bearing assembly having an inner member and an outer member and being positioned within the upper tubular, the inner member rotatable relative to the outer member and having a passage through which the rotatable pipe may extend;

a bearing assembly seal to sealably engage the pipe with the bearing assembly;  
and

a holding member for positioning the bearing assembly within the upper tubular.

These further features are not known from the prior art and the subject-matter of claim 1 is therefore new and the application thus fulfills the requirements of Article 33(2) PCT.

These features solve the problem of providing a system that seals either the riser or the BOP stack while drilling in deep water so that rig-up and release using conventional pressure containment equipment is possible. The seal could be quickly installed and removed. The seal allows fluids of different densities below and above the seal so that underbalanced drilling is possible by injecting gas into the fluid column below the seal while maintaining pressure control of the well.

Having regard to the prior art, this solution is not obvious for the skilled person, and therefore the subject-matter of claim 1 involves an inventive step in the sense of Article 33(3) PCT.

The subject-matter of claims 2-7, being dependent on claim 1, is also new and involves an inventive step.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

---

International application No. PCT/GB00/00731

2. Generally known from the background art is a method for increasing the pressure of a fluid in a borehole while sealing a rotatable pipe.

The method of the invention having the features of claim 8 further comprises

- positioning an upper tubular above the borehole;
- holding a bearing assembly within the upper tubular, the bearing assembly having an inner member and an outer member wherein the inner member is rotatable relative to the outer member and having a passage through which the rotatable pipe may extend;
- sealing the bearing assembly with the rotatable pipe; and
- sealing the upper tubular with the bearing assembly to control the pressure of the fluid in the borehole.

These further features are not known from the prior art and the subject-matter of claim 8 is therefore new and the application thus fulfills the requirements of Article 33(2) PCT.

These features solve the problem of providing a system that seals either the riser or the BOP stack while drilling in deep water so that rig-up and release using conventional pressure containment equipment is possible. The seal could be quickly installed and removed. The seal allows fluids of different densities below and above the seal so that a dual density mud system for well pressure control can be used.

Having regard to the prior art, this solution is not obvious for the skilled person, and therefore the subject-matter of claim 8 involves an inventive step in the sense of Article 33(3) PCT.

The subject-matter of claims 9-10, being dependent on claim 8, is also new and involves an inventive step.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

---

International application No. PCT/GB00/00731

**Re Item VII**

**Certain defects in the international application**

1. The passage "incorporated by reference" on pages 1, 3, 8 should have been deleted.
2. The reference sign 26 used for the inner member on page 9, line 4 should have been replaced by 36.
3. Claim 1 should have been modified as to read : ... a bearing assembly having....and being positioned within said tubular, ... ; ...a holding member for positioning said bearing assembly within said upper tubular.
4. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
5. The vague and imprecise statement in the description on page 13 implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them (see also the PCT Guidelines, III-4.3a).